

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 63-133521

(43)Date of publication of application : 06.06.1988

---

(51)Int.Cl. H01L 21/22  
H01L 21/26  
H01L 21/68

---

(21)Application number : 61-281533

(71)Applicant : KOKUSAI ELECTRIC CO LTD

(22)Date of filing : 25.11.1986

(72)Inventor : TSUNODA RYOJI  
HIURA KAZUO

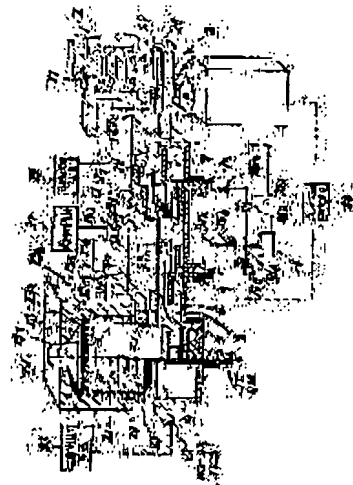
---

## (54) HEAT TREATMENT EQUIPMENT FOR SEMICONDUCTOR SUBSTRATE

## (57)Abstract:

PURPOSE: To enable heat treatment to be performed meeting the requirements for wafers in the specified high purity gas atmosphere by a method wherein an exhaust system and gas feeder are connected to a load lock chamber, a wafer carrier chamber and a heat treatment chamber while upper surface and side heating sources of respective wafers are arranged in the heat treatment chamber.

CONSTITUTION: After carrying wafers 11 from atmosphere to a load lock chamber 4, opening and closing door 4a and gate valves 7, 9 are closed and then the atmosphere in the load lock chamber 4 is substituted with high purity gaseous atmosphere specified by the load lock chamber 4, a wafer carrier chamber 3, a heat treatment chamber 12, an exhaust system 18 and a gas feeder 17. Then, the gate valves 7, 9 are opened to actuate wafer holders 28, 10, carrier mechanisms 5, 6 for feeding wafers 11 to heat treatment chamber 12 to be heat treated and returned to the load lock chamber 4 after heat treatment. Besides, within the heat treatment chamber 12, wafers 11 are turned to be evenly heated by an upper surface heating source 13a and a side heating source 13b. Furthermore, the temperature of wafers 11 can be measured by a radiation temperature measuring device 21 so that the electric conduction of heating sources 13a, 13b may be controlled by a temperature controller 22 to promote the heat treatment of wafers 11.



---

LEGAL STATUS

---

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's  
decision of rejection]

[Date of requesting appeal against examiner's  
decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2000 Japanese Patent Office